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TRANSLATIONS ON ENVIRONMENTAL QUALITY

No. 182

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WORLDWIDE AFFAIRS

MEETING ON BALKAN ECOLOGICAL MATTERS HELD

AU222049Y Bucharest AGERPRES in English 1937 GMT 22 Sep 78 AU

[Text] Bucharest, 22 Sep, AGERPRES--On September 22 [words indistinct] the Bucharest proceedings of the subregional experts' meeting on "Protection of the Environment and the Preservation of the Natural Biological Ambience in the Balkan Countries", where biologists, ecologists and hydrologists from Bulgaria, Greece, Yugoslavia, Turkey and Romania debated papers and lectures on ensuring a maintained ecological balance in the Balkan mountainous areas, on the elaboration of a methodology for the classification of the eco-systems and on the examination of the present stage of development of the resources of the biosphere.

The meeting adopted documents and recommendations aiming at the Balkan cooperation in ecological research in problems aiming at the preservation of the genetic stock, of the flora and fauna, the development of new reservations, people's education in the spirit of protecting the environment, training cadres for managing and developing the reserves of the biosphere. At the same time Balkan meetings of this kind were recommended to be held every two years, the next in Greece.

CSO: 5000

WORLDWIDE AFFAIRS

GDR OFFERS TO HOLD TALKS WITH FRG ON ENVIRONMENTAL PROBLEMS

LD251644Y Hamburg DPA in German 1440 GMT 25 Sep 78 LD

[Text] Bonn--After an interruption of nearly 5 years the GDR has once more offered to hold talks with the Federal Government concerning problems of the two German states on the protection of the environment. Government Spokesman Klaus Boelling told the press in Bonn on Monday that it is the "reliable impression" of the Federal Government that those in charge in the GDR are basically prepared to have such talks. Until now no arrangements for talks on definite projects have been made. Boelling characterized environmental issues as "technically terribly complicated." The most urgent need is attached by the Federal Government to negotiations concerning the salination of the Werra River by potash works in the GDR which has also had a highly detrimental effect on the Weser River. It was said in Bonn that the GDR Government intends to inform the Federal Government shortly about its ideas on subjects to be negotiated. Bonn assumes that not only the salination of rivers but also other common environmental problems ought to be discussed.

CSO: 5000

AUSTRALIA

WORKERS' ILLNESS TRIGGERS PROBE OF COPPER IN WATER

Canberra THE AUSTRALIAN in English 14 Sep 78 p 3

[Text]

HEALTH and water authorities throughout Australia are investigating copper levels in water following a contamination alert.

Officials have established that workers in seven large buildings in Newcastle, NSW, have been drinking water containing copper levels "many times" above accepted safety limits.

The buildings include the headquarters of the area's water supply authority.

Authorities in all other cities are now checking copper levels in large buildings recently erected or renovated.

Contamination has also been established in buildings in Sydney and Melbourne.

The poisoning was disclosed by a Newcastle specialist in preventive medicine, Dr Tom Woolard, who said that many office workers had sought treatment for stomach upsets, diarrhoea and muscle fatigue.

The Hunter District Water Board has ordered investigations into seven large buildings, including Royal Newcastle Hospital, Newcastle College of Advanced Education and Newcastle City Council's new administrative block.

At his Newcastle surgery yesterday Dr Woolard had found copper concentrations in some buildings which were well above the one milligram per litre limit recommended by the World Health Organisation.

He would not say how high to prevent undue public alarm.

But some reports have put readings in Newcastle at 200 times the acknowledged safety levels.

The president of Hunter District Water Board, Professor Allan Carmichael, said the board regarded the contamination as serious.

Contamination had been reported in new buildings or where water services had been replaced, he said. Copper pipes had lain unused during construction, sometimes for up to two years.

"We are directing our investigations and testing to copper tubing and copper manufacture to trace the cause," he said.

UPSETS

Dr Woolard's cases have shown mild gastro-intestinal upset symptoms, including malaise and muscle weakness.

"The symptoms have settled after the withdrawal of the water supply," he said.

"The softer the water the greater the problem."

Dr Woolard, who expects to release a preliminary report after another three months' study, said the problem appeared worse in big buildings where people drank from taps that might be used only occasionally.

House taps were less likely to produce copper-contaminated water because water was used more often and did not have time to settle in the pipes.

"It's no new problem," he said. "People have known for years that copper drinking vessels can produce high copper concentrations."

"Now copper seems to be the desirable plumbing."

He advised that people who noticed a blue discolouration in the water should flush it out.

Sydney Water Board said contaminated water had been found in a number of new, tall commercial buildings in the city.

Board chemists had been investigating for more than a year but had been unable to trace the cause.

"It seems to be found mainly in large buildings with big plumbing services, rather than homes," a spokesman said.

CSO: 5000

ENVIRONMENTAL REGULATIONS FOR RUBBER FACTORIES

Kuala Lumpur BUSINESS TIMES in English 11 Aug 78 p 1

[Article by Hardev Kaur]

[Text]

NEW environmental regulations, similar to those already enforced for palm oil, are being drawn up for rubber.

The regulations, to be gazetted on Oct. 1, will come into force on April 1 next year, thus allowing rubber factories six months to prepare to meet prescribed limits under the order.

The regulations will be notified under the Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Order 1978, which the Minister of Science, Technology and Environment is empowered to issue under the Environmental Quality Act 1974.

Mr A. Maheswaran, director of Water Pollution Control, Environmental Division, told *Business Times* that under the order any effluents discharged into watercourses must not exceed 300 ppm (parts per million) by April 1, 1979 and 200 ppm by April 1, 1980 of BOD (biochemical oxygen demand), as against the present average of 1,500 ppm.

The BOD has to be kept low so that enough oxygen is spared to support marine life.

Mr Maheswaran ad-

ded that under the order two sets of standards will be drawn up. One will be for factories producing concentrated latex and associated products and the other for factories producing block and conventional grade rubber.

In the case of conventional grade rubber factories, only those with an installed capacity of five tonnes or more will be affected by the order, which means that the smaller factories will be exempt from the law.

The standards for factories producing concentrated latex and associated latex are not yet available as they are still being worked out.

"However, these factories will be subjected to certain guidelines for good housekeeping. The guidelines will be issued by the Director General of Environment in a week or two," Mr Maheswaran said.

Once the standards were drawn up for factories producing concentrated latex and associated products they will become part of the order which is with the Attorney General's Chambers for final vetting.

Under the order, the 250 rubber factories in-

cluding 50 factories producing concentrated latex and associated products will have to apply for a licence to operate from April 1, 1979. The factories can apply for the licence from Oct. 1 when the Order is gazetted.

However, factories in existence before April 14, 1974 will be allowed to operate even after April 1, 1979 if their licences are not issued prior to that date provided they apply for their licence before Dec. 31, this year. This is a privilege extended to factories in existence before the Environmental Quality Act, 1974 came into force.

Those found contravening the law will be liable to a fine of up to \$5,000 or a year's jail, or both.

Mr Maheswaran said in drawing up the regulations, consideration had been given to the current lack of economically viable effluent treatment and disposal technology.

"In view of this, effluent standards have been based essentially on a year-to-year progressive reduction of the BOD load discharge," he added.

Mr Maheswaran said the raw rubber industry in Malaysia has been identified as the second most serious source of organic-type effluent wastes, the first being the palm oil industry.

The pollution from sewage, oil, palm mills and rubber factory effluents had been quantified and together they discharge a total BOD of two million pounds per day of which oil palm and rubber factories account for one million pounds.

Twelve rivers in the country are said to be grossly polluted. These include, Kelang, Melaka, Perak, Muar and Johore.

Rivers are also subjected to pollutants from other sources such as the pineapple, tapioca and the sugar industries.

As for water pollution caused by the discharge of other industrial effluents, particularly in industrial centres such as Kuala Lumpur and Petaling Jaya, the major sources are electroplating industries, tanneries, textile mills, food processing, breweries, distillers, electronic factories and sulphuric acid plants.

PEOPLE'S REPUBLIC OF CHINA

'KWANGMING DAILY' CALLS FOR PREVENTING POLLUTION

Peking KWANGMING DAILY in Chinese 17 Sep 78 p 2 HK

[KWANGMING DAILY commentary: "Factories and Mining Enterprises Should Never Be Allowed to Cause Pollution!"]

[Text] Following the rapid development of our country's industry, the problem of pollution in the environment, caused by industrial "waste materials," is causing increasingly grave concern among the party and masses of people. During a tour of the Peking Iron and Steel Company this year, Chairman Hua pointed out: "Steps must be taken to solve the problem of pollution." However, environmental pollution has still not been brought under control in many localities. In certain places, it has even developed to such a serious degree in some industrial and mining enterprises that it has become almost intolerable and a public menace affecting production and work and jeopardizing people's health. Today, this paper is publishing people's letters which reflect the seriousness of such pollution. Besieged by dense smoke, dust and factory noise, people are strongly calling for protection of the environment and the safeguarding of public health. Industrial pollution has definitely become a matter of utmost urgency and the time has come for it to be solved!

Ours is a socialist country and everything we do aims to serve the people. Eliminating pollution and protecting the environment is a vital matter concerning the health of the broad masses and the well-being of future generations; it has also been written into the Constitution of the People's Republic of China. Consequently, when grasping industrial construction, with a spirit of great responsibility toward the people and future generations, we must simultaneously adopt effective measures to conscientiously solve the problem of pollution. We definitely cannot permit our socialist enterprises to be creators of public menaces, developing production on the one hand for the welfare of the people but polluting the environment on the other hand to harm the people. This is a sharp contradiction. Any industrial and mining enterprise that cannot properly solve this contradiction cannot be called a genuine socialist enterprise.

However, at present some leading members of industrial and mining enterprises still do not basically understand the important political significance of controlling "waste materials" and eliminating pollution. They have not only failed to attach importance to controlling "waste materials," but have also wilfully permitted their emmission. They have turned a blind eye to the serious results already created and have ignored the reasonable demands of the masses. Because of this, the masses have the right to ask them: "Do you still have any class feeling?"

Many excellent articles have already been written on the subject of eliminating pollution and protecting the environment; many plans have been formulated and many rules have been laid down. However, some people are not conscientiously implementing them and, even though they publicly obey them, they privately oppose them. This cannot be permitted and must be resolutely corrected. A time limit must be set for them to mend their ways. The CCP Central Committee has already clearly stipulated by law that "actions will be taken against leading members responsible" who do not mend their ways after repeated warnings.

We must realize the four modernizations of the motherland within the shortest possible time. We must also certainly push forward the work of protecting the environment within the shortest possible time so that the skies of the motherland will always be blue, the waters of the motherland will always be clear, and our 800 million people can work happily and lead a good life in a clean, beautiful environment.

CSO: 5000

PEOPLE'S REPUBLIC OF CHINA

PEKING REORGANIZING INDUSTRIES TO REDUCE POLLUTION

Peking NCNA in English 0707 GMT 28 Sep 78 OW

[Text] Peking, 28 Sep (HSINHUA)--Turning Peking into a modern and clean metropolis in which someone standing on the white dagoba in the city's Peihai Park, may have a clear view of the western hills 25 kilometres away is the aim of Peking's economic construction departments.

Concrete plans have been made to modernize and reorganize systematically Peking's industry and to turn the country's political centre into one that is also a centre for culture, education and scientific research. Crowded, polluting factories in the city will be gradually moved to the outskirts and steps will be taken to cut down on pollution from them. Industries related to the needs of the city population and which are not environmentally harmful such as food, arts and crafts, radio and printing industries will remain in the capital. They, too, will be reorganized according to principles of specialization and division of labour, and will be modernized to provide a clean working environment.

At present, Peking's metallurgical, machine building and textile bureaus are among nine municipal bureaus that have taken over all the plants run by the eight city districts and suburban districts. Seventy-two specialized production companies or plants have been set up by the bureaus as one step in the industrial reorganization of the city. At the same time Peking has started to build more housing, hotels, restaurants and other public facilities. New roads are being paved and new sewage pipes are being laid as part of the planned municipal construction.

Peking, a consumer city before liberation, has grown into an industrial base with one million industrial workers since the founding of new China in 1949. Metallurgical, engineering, power, oil, chemical, electronics, meters and instruments, textile and light industries have developed here to the extent that Peking's annual industrial output value now surpasses the total for the whole of China at the time of liberation. At the same time as building large industrial enterprises, Peking has established a number of small and medium-sized plants. By the end of 1977, the gross industrial output of Peking's 18 urban and suburban districts and counties, including neighbourhood enterprises and rural workshops, accounted for one sixth of the capital's total output.

The problem has been however that the scattered enterprises lacked unified management and leadership. A wastage of manpower, materials and funds have resulted. Pollution, including noise pollution, has become a big problem. The expansion of urban industry has reached a state of saturation. Some industries have squeezed out some of the service trades needed for municipal construction and for essential services for the people who live in the city.

Proficient technicians and managers are badly needed to reorganize industry and leading economic departments have restored the titles of engineers and technicians that had been abolished by Lin Piao and the gang of four. Among the city's current 40,000 technical personnel, are many who have resumed work for which they were trained after having been forced to leave these jobs during the rule of the gang. The 300 chief and deputy chief engineers and the 2,000 engineers now have a voice in the running of their plant and can do their jobs properly. Four hundred technicians have been promoted to the position of engineer.

All the leaders of the 72 newly set up production companies and plants have been selected from among experienced managers. Chief engineers and deputy chief engineers are to be appointed. In a number of big factories which are being reorganized, stress is put on selecting cadres who are trained as technicians for the new leading bodies. A system giving responsibility for the running of the plant to the plant director under the leadership of the party committee is to be put into practice.

The Capital Iron and Steel Company, one of China's major steel producer complexes, appointed more than 20 engineers and technicians as directors and deputy directors earlier this year. The new directors continued to work at the blast furnaces and convertors and led workers to achieve new production records and to produce high quality iron and steel. They have also given a lead in studying the application of new techniques. These leaders have been well received by the workers.

Most of the directors and deputy-directors at the Peking general petro-chemical works' eight plants are graduates of colleges of engineering.

Universities and colleges increased enrollment in technical training this year. Local secondary technical schools enrolled 30,000 students, 50 percent more than the annual enrollment before the Great Cultural Revolution began in 1966. Quite a number of secondary technical schools have begun teaching computer science, numerical control, microwave technology, and courses on man-made satellites monitoring and automation.

All the new production companies will each set up a workers' university or a spare-time university. Many factories are taking measures to see their new workers reach the level of secondary technical school graduates within three to five years. Workers' spare-time schools and classes have been set up in some factories. These are often taught by their own engineers.

CSO: 5000

PEOPLE'S REPUBLIC OF CHINA

NATIONAL ENVIRONMENTAL PROTECTION EXHIBITION HELD IN PEKING

OWI41351Y Peking NCNA Domestic Service in Chinese 0328 GMT 12 Sep 78 OW

[Text] Peking, 12 Sep--Can we prevent pollution in the new Long March to realize the four modernizations? The Second National Exhibition on Environmental Protection now being held in Peking by the environmental protection leading group office of the state council has answered this question, which the people are concerned about.

The exhibition depicts the present level of environmental pollution in our country by displaying data acquired after investigation, monitoring and detection by the environmental protection departments and scientific and public health departments and by displaying numerous letters from the masses. After visiting the exhibition, visitors have realized that although our country has done much work in the field of environmental protection in the past several years, pollution is still not under control. In fact, the situation in some places is even getting worse. The exhibition points out: If we do not conscientiously solve this question in the course of the new Long March to realize the four modernizations, it will become a serious calamity, seriously threaten the people's health, tremendously damage our ecological development and waste our national wealth to an astonishing extent. Pollution has become a "new challenge" in the course of realizing the four modernizations.

At the exhibition, photos are on display that show Chairman Mao concerned with the question of multipurpose utilization while on an inspection tour to the Canton papermill in 1956; Premier Chou concerned with the question of the disposal of polluted water while inspecting the Tungfanghung oil refinery in October 1971; and Chairman Hua concerned with the question of eliminating pollution. A series of documents, regulations, stipulations and criteria on environmental protection worked out by the party Central Committee, the NPC Standing Committee, the State Council and the Environmental Protection Leading Group Office of the State Council are also on display, as well as the important speeches and directives concerned of the leading comrades of the central authorities. The late Premier Chou repeatedly stressed: Ours is a socialist planned economy which serves the people. While we are engaging in industrial construction, we should make great efforts to solve the question of industrial pollution and environmental pollution. We must absolutely not do anything that will cause problems for our offspring. The great attention paid to and the great concern shown for environmental protection work by the party and state are a gigantic motivating force for mobilizing tens of millions of masses to eliminate pollution and fundamentally guarantee our success in environmental protection work.

Also on display at the exhibition are the advanced experiences of the Hunan Chānglíng oil refinery, the Wuhsi County electrochemical plant, the Shenyang chemical plant, the Shantung Hsinwen cement plant, the Hofei tannery, the Shanghai carbon plant and two other typical units. These plants have in the main eliminated the pollution of the "three wastes." In the plant districts trees are growing everywhere and flowers are in full bloom and outside the plants crops are growing healthily. These plants are clean plants welcomed by the broad masses. In addition, the prominent results achieved by the petroleum industry, chemical industry, light industry, metallurgical industry, communications, building materials industry, coal industry, machine-building industry and electric power industry fronts in more than 380 fields, including disposal of the "three wastes," prevention and cure of mercury poisoning, electroplating innovation, smoke and dust elimination and noise control, are on display. These advanced experiences profoundly prove that if the leading cadres pay great attention to this question, firmly grasp environmental protection while promoting production simultaneously and make extensive socialist coordination by relying on the masses, the question of pollution can be solved.

The exhibition shows that in the past several years the staff members, workers and scientific research personnel of the environmental protection departments in our country have achieved good results in the scientific research of environmental protection. These results in scientific research have supplied the scientific basis for and new approaches to multipurpose utilization, harnessing the "three wastes" and eliminating pollution. The vehicle monitoring and detecting pollution in the atmosphere and other instruments and the effective methods of analysis and detection that they have successfully researched have made contributions to environmental protection work in our country.

CSO: 5000

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

YUNNAN RIVER POLLUTION--Kunming, Sep 9--Great efforts are being made to tackle pollution of the Tanglangchuan river area near this scenic capital of Yunnan Province. Eleven of the 26 environmental protection projects planned for this year, have already been completed. During an inspection of Yunnan Province in 1972, the late Premier Chou En-lai gave instruction to the provincial party committee on pollution. He said that the Tanglangchuan River area should be protected. The interference and sabotage of the gang of four meant that the problem was not solved properly at that time. Since the downfall of the gang, the provincial party committee has stressed the importance of pollution control in the Tanglangchuan River area. Factories causing the pollution have begun to deal with the problem. The Kunming phosphate fertilizer plant has built a special system to treat its waste water. The Kunming iron and steel plant now recovers and makes use of waste acid from steel rolling and waste gas from the blast furnace. The provincial government has made a ruling that in future factories producing heavy industrial waste would not be allowed to be built along the Tanglangchuan river. [Peking NCNA in English 0700 GMT 9 Sep 78 OW]

CSO: 5000

CUBA

CORAL MINING AT SEA TO SUPPLY NICKEL PROCESSING INDUSTRY

Havana JUVENTUD REBELDE in Spanish 5 Sep 78 p 2

[Article by Ramon Alberto Bendoyro]

[Text] Coral is used in the processing of nickel and, due to its importance in this industry, it is of inestimable economic value.

Through ocean currents and unevennesses on the ocean floor, nature has over a period of many years built up deposits of calcium subcarbonate on the north coast of Moa, precisely in the neighborhood of the nickel-ore deposits.

This substance, which forms the basis for one of the sea's many corals, is used as an alkaline base to reduce the acidity of sulphuric acid and obtain the desired levels for more effective precipitation in the leaching ducts, one of the operations employed in purifying nickel ore.

The cost of mining this coral is much less than that required to industrially produce calcium subcarbonate. Mining operations have been adapted to the Pedro Sotta Alba Nickel Company's production plan.

The Mine and Its Seven Men

In 1957, long before the nickel-refining plant went into operation, an American commission had spent 3 months making studies to determine whether this kind of coral could be used.

The results showed that the existing currents over the high-grade limestone deposit (fossil remains contain only as much as 8 percent sand), the estimated size of the deposit -- which goes back 100 years -- and the proximity of the site all economically favored the institution of mining operations.

Therefore, when the plant went into operation in 1962, mining operations, coral cleaning and mechanical equipment maintenance, all of which since then have been providing a supply of this important substance, were begun.

Seven seamen, silent and steady workers, did the job. With a tugboat and a barge with its derrick set up on one side of it, they mine the precious coral from the ocean floor.

After a long day and with the barge's hold filled to the brim, they return to port where the coral is cleaned in a special plant where impurities are removed.

Later, after the coral has been prepared for processing, the calcium subcarbonate is hauled to the factory. Meanwhile, the seven coral miners leave their equipment ready for the next day when they will start all over again.

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CSO: 5000

IMPROVEMENT PLANS UNDER WAY IN UPPER REGION

Nairobi DAILY NATION in English 21 Sep 78 p 6

[Text]

IN THIS scorched, remote corner of West Africa a big international effort has been launched to assure a livelihood for one million people living in fear of famine.

After decades of neglect, three development projects have begun which together could dramatically improve the sometimes precarious existence of the farmers on the savannah lands of Ghana's upper region.

Beset by periodic drought, this underdeveloped area not far from the fringes of the Sahara Desert has never been self-sufficient. It was hit hard by the great Sahel drought of the mid-Seventies.

The region, stretching along Ghana's border with Upper Volta, has no other resources but its agriculture. Parts of it are plagued by river blindness.

Its people have different ethnic origins to Ghanaians living in the central rain forests or coastal cities 800 km away. Until recently Accra civil servants regarded a posting here as a punishment.

Ghana, Canada, Britain and the World Bank are now involved in various programmes aimed at providing the Upper region with a stronger agricultural base and a reliable source of drinking water. These are:

•A \$20 million Ghanaian-Canadian project to sink 2,500 drinking wells is well advanced.

Irrigation

•Construction by British engineers of a 3.5 kilometre dam for the Ghanaian government to harness the waters of the Tono River for irrigation at an estimated cost of \$30 million.

•A sophisticated agricultural development programme set up with Ghanaian, British and

World Bank funds to educate farmers and provide them with full back-up services. The whole scheme has a budget of more than \$50 million.

The wells project has transformed the daily lives of village women. Instead of walking up to eight km to find water that was often muddy they now have hand-operated pumps close by.

Some 2,000 wells have been sunk so far and when the project is completed in December, 1979, every community of 300 people or more should have its own supply.

Project manager Robert Bannerman said tests had established there was sufficient good underground water to meet household, livestock and backyard gardening needs without adversely affecting the water table level.

"The reaction from the villages has been tremendous. It is honestly no exaggeration to say we have lifted a burden from their lives," he added.

Sanitation

Now a follow-up programme is under way to educate villages in water use, sanitation and cleanliness. "They are coping with a new phenomenon — regular, constant water," Mr. Bannerman said.

A reservoir has begun building up behind the Tono Dam which will provide year-round irrigation for 6,000 hectares that before could only be farmed half the year.

Eventually a network of canals stretching a total of 250 km. will snake out across the plain, irrigating crops of rice, cotton, groundnuts, maize and tomatoes.

Villagers watched suspiciously as the first of the huge earthmoving vehicles began clearing their land. In the past month the benefit of the scheme became apparent to them.

On one plot irrigated by the dam, maize grew high and thick. On a nearby farm not linked to the project, the maize was thin and scraggy.

Experts estimate the scheme, will give the locality a gross agricultural output of about six million dollars a year. But a lot of water will go to waste.

Temperatures rise so high in the long, hot season that some 21 million cubic metres of water — about a quarter of the reservoir's volume — will be lost by evaporation.

The Upper Region Agricultural Development Programme (URADEP) will take virtual charge of the region's agriculture from Accra-based civil servants.

"This area is so different from the rest of Ghana, it needs ideas developed in Bolgatanga," said

URADEP manager, Dr. Asibi Abudu, an economist.

The ambitious project, the work of years of study, will cover all aspects of farming. It

will set up training courses, develop ranches, tackle soil erosion and expand cash crops such as cotton.

URADEP will have its own radio station to reach farmers, and 22,000 transistor radios are to be distributed.

It will work closely with a separate company, Fascom, which has been established to market farm equipment and provisions. In the past tools earmarked for the upper region had a habit of ending up in the hands of profiteers.

Fascom, run by American William Ramey, from Richmond, Indiana, is opening 90 service centres across the region. Its staff will use motorcycles and walkie-talkies to get into the most far-flung villages.

On each of its sales there will be a two-and-a-half per cent surcharge. This will be credited to the purchasers to buy shares — eventually the farmers themselves will become the majority shareholders in Fascom.

"This is the toughest development project I have ever been involved with," said a British expert. "Communications here are virtually non-existence and the climate is bloody."

"...but if URADEP works it will revolutionise the upper region."

CSO: 5000

NIGERIA

FLOODS LEAVE 500 HOMELESS IN KWARA STATE

Kaduna NEW NIGERIAN in English 26 Sep 78 p 32

[Text]

FOUR villages in Kotonkarfe District of Kwara State have been completely submerged by floods from both the Rivers Niger and Benue.

The villages affected were Olumaye, Odah, Akpatsu and Iremedu.

As a result, about 500 people had been rendered homeless while properties including farm plantations, foodstuffs, domestic animals and birds were destroyed.

Another seven villages in the area — Edekapo, Ukwo, Mosete Esikapu, Odamah, Gbangede and Gitata had been encompassed by the two rivers thereby making them inaccessible.

Meanwhile, the local council authority in the area had advised the victims of the floods to move out and take shelter at Kotonkarfe in order to avoid loss of lives and properties.

A councillor in the area Malam Sami Musa, had called on philanthropists to assist the flood victims both in kind and cash.

He said they did not expect the floods because it occurred last in 1954.

A hydrological engineer with the Federal Ministry of Transport, Inland Waterways Department, Mr. J. O. Bassey, said that the level of River Niger had risen considerably.

CSO: 5000

NIGERIA

BRIEFS

MILLION TREE SEEDLINGS PLANTED--More than 1 million tree seedlings have been planted in Guyuk Local Government area of Gongola State in an attempt against desert encroachment. The seedlings which are presently in nursery beds would be distributed for replanting in different parts of the local government area. These facts were made known in an address by the chairman of Guyuk Local Government Council, Malam Muhammdu Bala during a tree-planting campaign in the area. Malam Muhammed urged the people in the area to do all in their efforts to see to the afforestation of the area. Stressing the importance of trees in the area, the head of department of the Natural Resources said that the planting of trees was the best way of preventing soil erosion. He said that the department of forestry, in the Guyuk Local Government would do all it could to aid the people to see to the success of tree planting exercise in the area. [Text] [Kaduna NEW NIGERIAN in English 19 Sep 78 p 7]

CSO: 5000

USSR

ENVIRONMENTAL PROTECTION STANDARDS BEING DEVELOPED

Moscow EKONOMICHESKAYA GAZETA in Russian No 36, Sep 78 p 13

[Article by Doctor of Agricultural Sciences V. Zavarzin, VNIIS department head, and Candidate of Economic Sciences S. Kozhanov, VNIIS sector chief: "Ecology and the Standard"]

[Text] Standardization in the environmental protection field is being done in accordance with the 1976-1978 work program of the USSR State Committee for Science and Technology. Two years ago, the USSR State Standards Committee approved the basic All-Union State Standard, "A System of Standards in the Field of Environmental Protection and Improving Natural Resources. Basic provisions," which was to have developed nine complexes of standards on protecting and making efficient use of water, the air, land and other natural resources.

Twelve state environmental protection standards have now been approved. They establish a classification of water resources and industrial discharges, rules for protecting streams near floatages and dry land near gas and oil well drilling and operating facilities, rules for monitoring air quality in view of the maximum allowable concentrations of harmful substances in air around residential areas, and so forth. More than 50 State Standards will have been created by 1980.

Standardization in the environmental protection field relies on sanitation-hygiene environmental quality norms which define the conditions necessary to normal human existence and which serve as the basis for setting maximum concentrations of harmful substances in the soil, water and air.

One of the most important topics scientific organizations are now working on, and our All-Union Scientific-Research Institute of Standardization (VNIIS) in particular, is standardization in the water quality field. It includes the development of water-quality requirements for making production technology more efficient, purification methods requirements, and requirements for products which seriously pollute water resources (pesticides, fertilizers, and so forth). Methods are also being developed for setting maximum

allowable norms for the discharge of pollutants into running water, lakes and other bodies of water, and regulations are being established for protecting water resources during different types of economic activity. Finally, an international standard is being readied for protecting the World Ocean.

Motor transport is known to be guilty of polluting the air basin. Much attention is being paid to setting automobile pollution standards. The State Standards which set the allowable content of harmful substances in exhaust gases are constantly being improved. For example, the standard on exhaust carbon monoxide was reviewed last year.

In May of this year, the USSR State Standards Committee examined and approved an important organizational-methods standard, "Protecting Nature. The Atmosphere. Rules for Setting Maximum Allowable Discharges of Harmful Substances by Industrial Enterprises," which was introduced by the USSR State Committee for Hydrometeorology and Environmental Monitoring. The State Standard was developed by the Main Geophysical Observatory imeni A. I. Voevodskogo, with the participation of institutes of the USSR State Standards Committee, the USSR Ministry of Health, the USSR Gosstroy, the Ministry of Chemical and Petroleum Machine Building and the USSR Academy of Medical Sciences. The State Committee for Science and Technology, the USSR Gosplan and leading industrial ministries assisted in its preparation.

The standard regulates the rules for setting and monitoring allowable discharges of harmful substances by industrial enterprises with consideration of hygienic requirements, the latest scientific and technical achievements in production technology, and economic and ecological requirements.

The State Standard anticipates setting maximum allowable and temporarily agreed-upon discharges of harmful substances (MAD and TAD) for each source of air pollution, based on sanitation-hygiene norms and with consideration of weather conditions, the characteristics of the discharge, terrain relief, enterprise location, housing zone, and other factors. Observance of MAD's and TAD's under the standard is mandatory in planning, renovating and operating enterprises and other sources of air pollution.

Other important directions in standardizing air-protection measures would include the development of exhaust gas discharge normatives depending on composition, concentration, source and specific local conditions; requirements on organizing territory which will facilitate protecting the atmosphere of residential areas from harmful household, industrial and transport discharges.

The USSR State Standards Committee is also developing statewide standards and organizational-technical documents on soil and landscape protection and on efficient land use.

Standardization work in the soil protection field is being done in the following areas: protecting soil from various types of anthropogenic pollution and inefficient use, preventing erosion, and taking various types of steps.

Landscapes play a major role in protecting the nation's flora and fauna, in meeting the aesthetic and recreational needs of society. Standardization in the landscape protection field is being done along two main lines. Standards are being developed first for protecting natural landscapes in order to create standards in the various natural zones and second to set standards for planned landscape changes.

The efficient land use standards complex being worked on now anticipates setting norms for confiscating land for various land users, as well as the development of measures to improve land condition, its recultivation, and restoring soil fertility. Introduction of these State Standards will help eliminate excesses in withdrawing land for various projects and accelerate the return of land to economic circulation. As of now, a number of state standards have already been approved, in particular, those establishing the composition and size of urban greenbelts, classifying deteriorated land for recultivation, and classifying stripped and country rock for biological recultivation.

Standardization in the environmental protection field is picking up steam. Suffice it to say that the VNIIS, as the lead institute, coordinates the activity of 137 organizations of 39 ministries and departments.

The State Scientific Research Institute of Land Resources of the USSR Ministry of Agriculture and the USSR State Committee for Forestry's "Soyuzgiproleskhoz" Institute are working actively in the area of improving land use; in the field of air quality -- the Main Geophysical Observatory imeni A. I. Voyeykov of the USSR State Committee for Hydrometeorology and Environmental Monitoring, the Institute of General and Communal Hygiene imeni A. N. Sysin of the USSR Academy of Medical Sciences, and the Central Order of Lenin Institute of Advanced Training of Physicians of the USSR Ministry of Health. The VNIIvodgeo [All-Union Scientific Research Institute of Water Supply, Sewer Systems, Hydraulic Engineering Structures and Engineering Hydrogeology] of the USSR Gosstroy, the Central Scientific Research Institute for Overall Water Resources Use and the All-Union Scientific Research Institute for Water Quality of the USSR Ministry of Water Management are actively developing water quality and efficient water use standards.

At the same time, it must be noted that several scientific organizations are late in carrying out planned work. This applies, for example, to the Hydrochemical Institute of the USSR State Committee for Hydrometeorology and Environmental Monitoring.

In view of the exceptional importance of the environmental protection problem, the effectiveness of scientific work must be improved, as must be coordination of the actions of co-executor agencies.

In order to determine the economic effectiveness of capital investments in the construction of various projects it is necessary, in our view, to take into account any harm done to natural resources. But it is hard to do that

without a standard for evaluating natural riches in economic terms. Thus far, unfortunately, no such standard has been developed. At the same time, one would think it would restrain the "appetite" of land users and water users, which is sometimes unjustifiably large.

11052
CSO: 5000

CLEANING UP INDUSTRIAL AIR POLLUTION

Moscow TRUD in Russian 24 Aug 78 p 2

[Article by A. Matrosov, director of the All-Union Scientific Research Institute of Work Safety of the AUCCTU, candidate of technical sciences, and V. Rabinovich, director of the sector of dust-removing devices, candidate of technical sciences in the column "Opinion of the Specialist": "Clean Air Industry"]

[Text] One of the most important tasks of the work safety service is control of dust and harmful gases whose release accompanies many production processes. The state is releasing great resources to solve it. In the Sverdlovskaya oblast, for example, about 70 million R have been spent on measures to sanitize the production medium and protect the air basin during the Ninth Five-Year Plan. This is almost 3 times more than during the Eighth. The USSR Ministry of Nonferrous Metallurgy for the construction and reconstruction of the systems of industrial ventilation annually allocate 35 million R. A lot has been done, especially in recent years. The atmosphere has notably improved in the shops of enterprises, and the air has become cleaner in industrial cities. On the Ural this is felt by the residents of Revda and Asbest, Pervoural'sk and Nizhniy Tagil.

But there are still many enterprises of metallurgy, chemical industry, thermal power engineering, paper and pulp industry, and other branches that are operating under difficult conditions unfavorable to human health.

At the same time the enormous resources given by the state to work safety, in particular to control the dust content and gas content of the production areas are far from being used with full efficiency. There are frequent cases when the money in the direct sense of the word is thrown to the wind. We were convinced of this having analyzed on the instructions of the AUCCTU jointly with other institutes of work safety the condition of the designing, assembly, setup and operation of systems of industrial ventilation in 15 branches of industry.

The employees of the laboratory of dust removal in our institute went to tens of enterprises of the USSR Ministry of Nonferrous Metallurgy. However unfortunately, among them there was not one where systems of ventilation, suction, and air conditioning were completely solving their task.

To a considerable degree such a situation is explained by the poor organization of the planning work. The level of technical solutions placed in the standard plans often does not meet modern requirements, and the developed designs are inefficient. They often indicate sanitary engineering and electrical engineering equipment that has long been removed from production. For years the necessary corrections have not been made in the drawings.

What is the reason for such a situation? The quality of the planning solutions is determined a great deal by how rapidly the developers receive information on the latest achievements of science and technology, and to what degree they are provided with original working material. At the same time the system of information that is forming now is far from perfection. Over 30 organizations that distribute materials for planners operate separately.

Currently there are about 400 standard documents that concern ventilation of industrial enterprises. At the same time the majority of them were issued before 1970 and today are a bibliographic rarity. There is essentially also no promising information on newly developed documentation and designs of ventilation equipment. It is evident that the time has come for the USSR Gosstroy to create a single, centralized system of information.

Frequently the branch institutes do not have a scientific research base to solve a broad range of problems associated with work safety. In the copper industry, for example, a single laboratory operates in this direction.

The structure of the planning organization is incomplete. Only in a quarter of them the departments of ventilation have been staffed with skilled personnel. The errors of the planners that develop as a result often result in very unpleasant consequences. For example, the specialists of the Leningrad VAMI [All-Union Institute of Aluminum and Magnesium] planned a system of ventilation for the Dneprovskiy Aluminum Plant such that with a southwest wind it forces harmful gases into production areas. The institute Kavkazgiprotsvetnet solved the problem of purifying gases in the vitriol shop of the Ordzhonikidzevskiy Plant "Elektrotsink" such that the enterprise began to lose with the escaping gases about two tons of zinc sulfate per day. Investigations indicated that as a result of such errors in counting at the Krasnoyarsk Aluminum Plant one-third of the ventilation units operated unsatisfactorily, at the Alaverdi Mining and Smelting Kombinat--half, and at the Bogoslovskiy Aluminum Plant--even more.

However it would be incorrect to see in the work of the planners only minuses and errors in counting. In nonferrous metallurgy and other branches ventilation purifying devices are used that are not inferior to the best foreign models. These are, in particular, the dust extractors and filters designed by the NIIOGAZ [State Scientific Research Institute for Gas Purification in Industry and Sanitation], the dust catchers of the Sverdlovsk and Leningrad Institutes of Work Safety, the Institute TsNIIpromzdaniy [Central Scientific Research, Planning and Experimental Institute of Industrial Buildings and Structures], and others. However the equipment that has proved to be good is put out by the industry in a clearly insufficient quantity. More than half of the enterprises of nonferrous metallurgy now are not provided with reliable filters, ventilators, and heating elements.

It is evident that in relation to the concentration of production and putting into operation of powerful enterprises it is expedient to create centralized systems of ventilation. For this ventilators are needed with output up to 200,000 cubic meters per hour. At the same time our industry as yet is not producing them.

The problems of the clean air industry at the active enterprises is felt especially acutely. Thus at the plants of the USSR Ministry of Nonferrous Metallurgy over 30% of the dust-and-gas-collecting equipment is obsolete and needs to be replaced. However from year to year the claims are not satisfied. The enterprises that can be modernized often are forced to plan the ventilation apparatus with their own forces. For example, the design bureau of the Noril'sk Mining and Smelting Kombinat, where they are seriously involved in improving working conditions, about 600 sheets of drawings of different types of purification devices are put out during the year. It is clear that not every enterprise has such power. This is because the resources isolated for work safety often remain unassimilated. Thus at the Ufaleyevskiy Nickel Kombinat 40% of these allocations have not been used, and at the Kanakerskiy Aluminum Plant--70%. And on the whole for the enterprises of the USSR Ministry of Nonferrous Metallurgy the resources to improve working conditions and protect the air basin are regularly used by only three-fourths.

How can the situation be corrected in the clean air industry? A lot in the solution to these problems depends on the recently created Main Administration of the USSR Minkhimasha [Ministry of Chemical Machinery] to develop and produce gas-purifying and dust-catching equipment which has been called upon to become the interindustry coordinating center. However, it appears that it is necessary to undertake yet another step: to create branch scientific production associations which would solve all the questions of manufacturing systems of ventilation, air conditioning and air suctioning, starting from the scientific developments and ending with the setup of the finished equipment.

It is no less important to achieve the correct use of the means to control the dust and gas content. For unfortunately, the ventilation equipment of the majority of enterprises is now being run unsatisfactorily.

The staffs of workers and the duration of between servicing cycles are set by eye. If one adds to this the lack at many enterprises of a modern operating base, the picture that is outlined is rather unattractive. At the same time with good organization of this matter significant successes can be achieved. An example is the Noril'sk GMK [Mining and Smelting Kombinat]. The ventilation service here has been given great authority, it is headed by the assistant chief engineer of the kombinat under whose direct supervision the reconstruction, setup and certification of the systems of air purification are conducted at all the enterprises. There is constant control over the timely repair of the units and the efficiency of their operation, innovations are systematically introduced, and close ties are maintained with many scientific research organizations in the country. The ventilation service of the kombinat has existed a little more than nine years, but during this period the discharges into the atmosphere have been reduced by more than 3-fold, and the working conditions have been significantly improved at the sintering factory, and the nickel and copper plants.

The creation of analogous subdivisions at each enterprise must become not only the duty of the administration, but also the concern of the local trade-union committees, and the technical inspection of work of the trade unions.

It seems that it is also necessary to devise a system of material incentive for the planning, setup organizations, and officials of enterprises to improve working conditions. Control of dust and harmful gases in industrial areas is an important matter that requires a comprehensive approach and constant concern. And one cannot omit active trade union control.

9035
CSO: 5000

USSR

NEUTRALIZING PETROCHEMICAL WATER POLLUTION

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 Jun 78 p 2

[Article by V. Kostyuk, head of the laboratory of VNIIPKneftekhim: "To Receive Equal Rights"]

[Text] The technological activity of people has resulted in the fact that after 50 years of our century pollution of the planet has sharply increased and become universal. The word "ecology" is known to everybody today. The problem of environmental protection has become one of the most urgent. And you will not find a man who would not vote with both hands for its most rapid solution. But when the matter reaches the practical implementation of any environmental protection measure, it is easier to overcome technical complexities than to withstand the inertia of traditional views.

One of the major consumers of water is oil refining and the petrochemical industry. The oil refining plants (NPZ), as a rule, are located on the shores of major rivers, and basins in mid and upstream. The specific consumption of fresh water at the modern NPZ with high water turnover equals 0.1-0.5 cubic meters per ton of oil refined. In the wastewaters of the NPZ there are fairly large quantities of petroleum products, phenols, sulfides, surface-active substances, and other admixtures. The most significant of them are different mineral salts which until recently were discharged into fresh-water basins.

Several years ago the petrochemical branch was faced with the task of automating the NPZ, that is to eliminate the need of direct links between the plants and the reservoirs. On the order of the USSR Minister of Oil Refining and Petrochemical Industry V. S. Fedorov the first such plant became the Lisichansk NPZ. One of the executors of this task was our All-Union Scientific Research and Planning-Design Institute of the Oil Refining and Petrochemical Industry. Neither in the world nor in the domestic practice was there any experience of reprocessing and neutralizing the saline effluence of the NPZ. This matter had to be started from zero.

September, 1977 at the Lisichansk NPZ a unit for neutralization of saline effluence was put into industrial operation. This was the first unit in the

branch, in the country, in the world... The difficult technical problems remained behind. Social ones appeared.

The neutralization unit is not a traditional purification structure. It can only be compared with the shop of the modern chemical enterprise--both in scale, and in equipping with complex apparatus. Foreseeing that it would not be that easy to handle it the institute in advance, while the unit was being built, prepared, and trained the service personnel. But...as soon as the work had started of the trained personnel there remained only a half. A year of operation had not passed when the supervision of both the unit and the shop of treatment facilities in which it was included had changed three times. All of this was because the unit, this most important section of the plant, was an auxiliary production. And if it was auxiliary then the attitude towards it corresponded to that.

The head of the unit has so many duties in return his wages are lower than an employee in main production. We will add (more precisely, subtract) the additional payments for the quality and other incentives. And we will understand why in the main shops the personnel are selected more carefully. Why one head of the unit did not have higher education. Why another changed his place because of an apartment. Why a third went to another shop.

Requirements for the qualification of workers that serve the unit are not lower than for workers of the main shops, while the incentives for them differ in the same proportion as for the heads. Therefore today the unit is served mainly by workers who only yesterday finished the PTU Vocational and Technical School. We assume that from inexperience they will disrupt the pattern and will put the unit out of action. However neither the first or the second fact will become an extraordinary occurrence for the enterprise. For if it does not run for a month no one will be strongly disturbed.

What is the matter? For one thing they consider oil that has been refined. They do not consider and do not plan for purified water. It automatically passes from the circle of mandatory measures to the circle of desirable. But one can act thus without considering when the water flows by gravity into the settling tank--as much as went in, that much also came out. Today it is reprocessed. The new technical level of purification, and the new type of work require also a new approach. The work must also be considered and encouraged. And whether we want it or not we will have to pay. Either according to that large bill which nature will give us, or according to that reasonable bill which we can provide for in our planned economy.

9035
CSO: 5000

ENVIRONMENTAL DEGRADATION IN ARMENIA BEMOANED

Yerevan KOMMUNIST in Russian 26 Jul 78 p 2

[Article by M. Adonts, doctor of economic sciences, professor, and S. Musayelyan, doctor of technical sciences in the column "Man and Nature": "In the Interests of Each and Everyone"]

[Text] Environmental protection in our country is considered the most important state task and a concern of all the people. In this respect one cannot help but recall the wise words of K. Marx that each generation must have the task of using the natural resources such that they are left in a better condition than the given generation received them from their ancestors. The soviet power from the first days of its existence has taught a prudent and thrifty attitude to the resources of our environment.

Socialist transformations, and the gigantic scope of man's effect on nature today require legislative solutions to environmental protection. The Soviet Constitution proclaims humanistic principles of environmental protection. Who and in what state is capable of still imposing upon themself the law of such environmental protection and such concern for future generations! Only in the socialist society can such humane goals be set, and they are only within the power of it.

An enormous path has been taken from the first Lenin decrees "On the Earth" (1917), "On Forests" (1918), and "On Mineral Resources" (1920) to the vast complex of constitutional statutes that have been successively realized under the conditions of developed socialism.

The laws issued on environmental protection in all the union republics indicate the constant concern of the Communist Party and the Soviet state on environmental protection. A whole series of decrees of the CPSU Central Committee and the USSR Council of Ministers have been adopted on questions of land reclamation, intensification of environmental protection, and the rational use of natural resources.

In the Fundamental Law of the Armenian SSR environmental protection and the rational use of its resources acquire the nature of a constitutional requirement. Reading carefully in the lines of the new Constitution of the republic one is convinced again and again that this document completely meets the aspirations

of our people. The advances of the republic in environmental protection are evident and enjoy general acknowledgement. They are a consequence of the state's concern for the health of people, the sources of natural raw material, the flora and fauna, purity of water and air, and fertility of the soil.

The new stage of the scientific and technical revolution also requires new calculations in man's interrelationships with the environment and a more advanced technical policy in this sphere.

For Armenia with its complicated natural conditions, highly developed industry, multibranch agriculture, and great population density the problems of the rational use of natural resources and environmental protection are vitally important. These problems are very numerous and diverse. We would like to dwell only on some of them.

In recent years, as we noted, a lot has been done to sanitize the water and air basins of the republic, and for the rational use of natural resources. However it is no secret that the enterprises continue to discharge polluted gases and sewage. This, in our opinion, is the result of imperfect plans for the recovery of wastes during the construction of new industrial plants, and the reconstruction of the active productions. Often in the planned calculations the quantity of discharges is directed to an absolutely pure medium, and local conditions are not considered. As a result each plant taken individually is fit into the established norms, and on the whole for the industry of the city the permissible level is exceeded.

The earth is our wealth. It should be guarded as we guard our health. At the same time under modern conditions the problem of the efficient use of land in agriculture and in other spheres of social production is especially acute. It would be erroneous to believe that the land is not worth anything to society. First of all we have very limited land, especially the best sections. Moreover a lot of the land drops out of the agricultural turnover as a result of municipal, industrial, power engineering, road, and other construction.

There are serious claims also for the enterprises of construction materials who often, without any need attempt to place their plants on good lands, and do not fulfill the recultivation plans. From year to year the plans of water- and air-protecting measures are not fulfilled, for years, and sometimes decades, the putting into operation of treatment facilities is delayed.

It appears that it is necessary to take a comprehensive approach to the protection and rational use of natural resources, from a single state position not separated by departmental barriers. In our republic there are many protection inspections, institutions and services, the majority of which have a particularly departmental nature. This of course is not in favor of the matter. Apparently the time has come to follow the example of other republics and create a republic organ for protection of all natural resources. It must also express a firm will and exacting concern for land, forests, waters and mineral resources. In evaluating environmental protection as a component

part of our economy one should concentrate its control under the Council of Ministers of the republics. With the creation of such a governmental organ the departmental barriers, and seniority will disappear, and it will become possible to make a more objective and comprehensive plan of the environmental protection measures, and to conduct strict state control over their implementation. The matter in whose success the population of our republic is deeply interested in benefits from this.

The role of science increases in the matter of the rational use of nature and environmental protection. In different institutions extensive environmental protection research is being conducted. As yet they are insufficiently co-ordinated. It is necessary to subject their complicated system to the solution of a single goal, and to unite the efforts of specialists of different fields. Therefore the creation of a scientific center for the comprehensive use of natural productive forces, environmental protection measures, and prediction of changes in the environment has become for the republic an urgent need.

In the Tenth Five-Year Plan for measures of environmental protection in Armenia more capital investments will be allocated. Our task consists of skilfully and zealously using these resources, and protecting nature from pollution. Each resident of Armenia, and each laborer must to the extent of their powers, potentialities, and service duties guard the natural resources, and think about the condition of the environment in which we live and in which our children and the next generations will live.

9035
CSO: 5000

USSR

GEOCHEMICAL MAPS AID IN CLEANING MOSCOW'S AIR

Moscow STROITEL' NAYA GAZETA in Russian 16 Jul 78 p 3

[Article by Yu. Bersenev, TASS correspondent: "Clean Sky of Moscow"]

[Text] In Moscow the first geochemical maps of the city have been drawn up. They designate even the smallest foci that threaten the environment with pollution and which must be eliminated. The studies which are of great importance for the protection of the pure air and water basins of the capital have been begun on the initiative of the ispolkom of the Mossoviet [Moscow City Soviet Workers' Deputies].

The supervisor of the work, head of the sector of geochemistry of the environment of the Institute of Mineralogy, Geochemistry and Chrystallography of Rare Elements Yu. Sayet told the TASS correspondent:

"The expedition formed by the institute took about 25,000 soil samples deposited in rivers and reservoirs, snow cover and vegetation. The density of observations were comparatively high: in certain places--up to 100 samples per square kilometer. A very detailed map of the environment was obtained. In the studied regions we can precisely state its condition at any point--all the way to the street, house and even courtyard.

Among the major cities in the world Moscow is one of the cleanest. The results of our studies once again confirm this. Thus, in the new large residential blocks, the air, soil and precipitation do not differ from the suburban.

Comprehensive measures are being implemented in the struggle for cleanliness of the city. At the plants and factories modern treatment facilities are being introduced. The enterprises that pollute the atmosphere are being moved beyond the city limits.

With the expedition contacts were established with over 40 scientific and planning-design organizations. With some of them, in particular with the All-Union Institute of Secondary Resources agreements were concluded on cooperation in developing resources to protect the environment, and recover wastes of production and domestic garbage.

The experience of Moscow in organizing and conducting geochemical studies can be useful also for other cities in the country.

9035
CSO: 5000

USSR

BRIEFS

ROMANOV AT ENVIRONMENT SESSION--A city soviet session was held in Leningrad today to examine the tasks of the city and rayon soviets of people's deputies to fulfill the clauses in the USSR Constitution relating to environmental protection. Romanov, CPSU Central Committee Politburo member and first secretary of the Leningrad Obkom, took part in the session. [Text] [Moscow Domestic Service in Russian 1900 GMT 18 Sep 78 LD]

CSO: 5000

FRANCE

GRUSON INTERVIEWED ON GOVERNMENT'S ECOLOGICAL EFFORTS

Paris LE MONDE in French 23 Sep 78 pp 1, 2

[Interview with Claude Gruson, former chairman of the interministerial group for evaluation of the environment, by Marc Ambroise-Rendu; place and date not given]

[Text] Claude Gruson, 68 years old, former director of the INSEE [National Institute of Statistics and Economic Studies], now director in a banking company, headed for six years the interministerial group for evaluation of the environment. He has just resigned from that position. That organization is little known but it has worked hard. Credit goes to Claude Gruson for about 10 reports on anti-waste, agriculture, energy, the economic theory of the environment, statistics on the quality of life, nuclear waste, and so on. Claude Gruson feels that his mission has been accomplished. Today he shared with us some of his thoughts, at times highly critical, inspired by six years of effort on ecological problems. First, he explained the nature of the interministerial group for evaluation of the environment.

The group was established by Robert Poujade, who was the first Minister of the Environment. At that time this ministry had a new political objective but did not have any data-gathering system of its own, no branch to do any initial planning. So Robert Poujade and his aide Serge Antoine had the idea of entrusting these tasks to a group consisting of some 20 officials representing the various ministries, specialists in ecology, and economists. Seven working groups were organized to determine the notion of quality of life, the system of statistics, the use of space, natural resources, energy, technology, and agriculture. These working groups called on numerous outside consultants. The effort generated much curiosity, interest, and even devotion. The outcome was a series of very interesting reports such as that of Jean Couture on "energy and environment" which in 1975 really crystallized the problem; that of Jacques Attali on the mathematical evaluation of the

environment; and so on. Then, an ad hoc group was created to draw up the report on the anti-waste campaign.

[Question] Have statistical data, the thoughts and proposals flowing from your efforts modified the policy on the environment and the management of French affairs?

[Answer] What a question! If they have had an impact at all it was infinitesimal. Some reports hit bull's eyes with public opinion, notably that on waste. But on the political plane our efforts were in no way followed by results. It should be recognized that between the initial question of Robert Poujade--and of the other ministers who succeeded him--and the manner in which I answered there has been a discrepancy. The ministers expected the group to supply recipes making it possible to build general indexes, synthetic but quantitative of the quality of life--a kind of gauge. This work was done elsewhere. Two years ago the OECD [Organization for Economic Cooperation and Development] collected statisticians specialized in problems of urban environment. They managed by using strategies and formulas to find a way to compute such or such an index. That is what was expected of me.

[Question] And that is what you did not do....

[Answer] Let us say that that is not everything that I accomplished. At each meeting of the group I made my point of view very clear. It is perhaps possible--though I am not sure of it--in a given region, at a given moment, to classify the important points as regards the environment and to derive indexes from them. But to devise an over-all index, surely not. A concept of Gross National Happiness is absurd; it is phantasmagoria.

[Question] In 1974 you published statistics on the environment and the quality of life which were updated and published once more in 1978. Can one not find in these 650 pages of data the elements for a series of indexes?

[Answer] These volumes of statistics are very interesting and even amusing to consult. They show the immense variety of the phenomena that are relevant when one speaks of the quality of life. The drawback of this periodical review is that it places everything on the same plane: pollution, noise, waste, credits assigned to regional parks, and so on. You have a mass of figures. What weight will you give them? Is it the political authority as a function of what it believes it knows of the wishes of the population which is to determine such weighting? It is completely prepared to do so, but I believe that it is not equipped for that. And it would be a mistake to give it that right.

In my opinion the government should be entitled to choose only after a serious discussion during which opinion leaders, appropriately informed, would have spoken out. We should follow the example of The Netherlands where a veritable debate concerning the idea of a change in life styles has occurred. But Holland is a truly advanced democracy.

[Question] In 1974 you published a report entitled "The Anti-Waste Struggle: A New Policy on the Environment, a New Economic Policy." The agency for the conservation of raw materials, the national agency for waste products, the delegation for energy conservation, the policy of time allocation--are these not fall-outs from that report?

[Answer] I did not have much to do with their establishment. They were ideas in the air which I reiterated. Besides, I do not believe that they are fully effective.

[Question] Yet, the government became strongly inspired by your work....

[Answer] Yes, we had a lot of fun with the 100 proposals that we had formulated. But there were a few initial pages, more important in my eyes, which were not taken seriously. I was saying that a veritable struggle against waste, that is, a campaign for the recycling of waste, for promoting maintenance and repair work, and for conserving energy assumed a large number of decentralized efforts which should be profitable, or at least not very expensive, if they were done by the public services. A problem of economic computation and consequently a problem of price arose. But under the existing price system repairs, which call for labor, are becoming more and more expensive while activities connected with the replacement of used equipment are profitable. If the price of energy were at a level compatible with a long-term solution of the energy crisis, that is, much higher than it is, it would be in our interest to keep our old automobiles (if they did not consume excessive gasoline) and washing machines and to have them repaired. However, the economic instruments available to us do not enable us to oversee the price system. Prices evolve as they can without ever taking the long-term requirements into account. Price policy, when it exists, is limited to controls analogous to freezes. In order to act otherwise planning would be necessary. That is what the anti-waste report stated. That condition has been forgotten.

"Long-Term Dynamics"

[Question] At that time you predicted that society would be prompted to alter its patterns of consumption and production. You characterized the privately owned automobile as "outdated." Were you not overly pessimistic?

[Answer] I continue to believe that the proliferation of the privately owned automobile in its present form is a dismaying absurdity. There are others. But this absurdity will become evident only in the long run. For we have not solved the following series of problems: the Western world has a deficit trade balance vis-a-vis the oil-producing countries. The latter are unable to consume the aggregate of their purchasing power. The petro-dollars are being recycled in ways that defy anticipation. Hence the aggressive export policies, Japanese or German style, entailing growing monetary disorder. It is impossible to set clear perspectives. No one knows

any longer what to commit himself to. In the meantime, it is true, people continue to live. The governments know now how to manage even deteriorated situations. They mitigate unemployment a little; the international financial system is able to recycle the petrodollars. In brief, people succeed in concealing the profound lack of coherence in which we live. Can we hold out for a year, five years? What is sure is that no one in the leadership circles wishes to bring about the economic, political, and social changes which adaptation of this challenge would imply. People lock themselves up in this situation and postpone the necessary changes indefinitely.

[Question] The policy that you propose is premised on fairly solid planning. Yet, contrariwise it is liberalism which is on the ascendant. What could be the result of this trend for the economy and the environment?

[Answer] The absence of planning and its consequences on the French economy over-all involve an enormous and major debate. We cannot broach this problem in its entirety. But we can perceive one of its concrete aspects connected with the problems of environment.

For three years now we have pursued a study on the agglomeration of Rouen. It was indeed very imprudent to come out from the top of our head with an information system on the environment. For what is environment? What makes it satisfying or not? How is it perceived by a collectivity? These questions are not simple. It was necessary to take a concrete, localized, example. We asked teams of sociologists how the idea of the quality of life was viewed by the population and the local leaders. We were not overwhelmingly enlightened. The man-in-the-street as well as official circles speak especially of ideas that are in the air, of things that are common knowledge. A truly considered view does not exist at all. We ordered a study on the problem of transportation. It shows that a strictly sectorial perspective leads to a vicious circle. To measure the growth of traffic, to seek to adapt the road network is to create the temptation of additional traffic and leads sooner or later to further clogging of the roads. Conclusion: any transportation policy, when it is planned by pure technicians, can only lead to an impasse.

We also had an exhaustive review made of all the indexes connected with the quality of life. The review indicates that it is thus possible to establish a fairly extensive data bank. But life is movement and problems relating to the quality of life have a long-term dynamic. That is why we have outlined three possible scenarios for development in the Rouen region by the end of the century. The first assumes reactivated growth under a system of free enterprise. The second envisions planned development. The third projects a decline despite a few local initiatives.

"To Proceed Like Teachers Before Students"

[Question] Of these three scenarios, which is the most favorable for the quality of life?

[Answer] Since I am of leftist persuasion I say that it is the second even though not in the immediate future. But our essential conclusion is that depending on the scenario in which one is placed the problems of roads, the educational system, leisure, and many others are posed differently. For example, the leisure habits of a population which tends to become older are not the same as those that should be promoted to attract young cadres. The crucial thing consists then in initiating reflection, a debate on life styles premised on several scenarios.

[Question] Can this method of scenarios serve elsewhere?

[Answer] The idea that we have started to implement seems to me to be perfectly transposable in other regions. At Rennes or Lille or Rouen, the problems of the quality of life become concrete only from the time when one tries to view them within a framework of evolution. It is here that the need for planning reappears. As long as we do not have an aggregate concept of our future in France as well as in Europe generally, regional studies can only continue to be very vague. It is first necessary to answer the question: "How will the economy of the West get out of its present difficult situation?" And if a solution is perceived what type of society does it imply? It is only at that time that regional problems can be specified.

[Question] Among the efforts of the interministerial committee for evaluation of the environment is an unknown report. It deals with radioactive waste and was written in 1976. Some 20 of its members and about 30 consultants participated in its preparation for two years. Why has that report never been published?

[Answer] The publication of the other reports of the group depended on the Ministry of the Environment alone. For the latter the endorsement of the Ministry of Industry was requested and Michel d'Ornano, at that time minister of industry, never answered. The political and administrative authorities were greatly disconcerted by the nuclear problem. Until 1970 people were indulging in a Commissariat for Nuclear Energy concentrating on its peaceful applications. Then came the Yom Kippur war and the accelerated nuclear program. An opposition movement began. The men with power--political leaders and executives of the EDF [French Electric Power Company]--told each other: "Here is a case that we have been studying for years: we have examined all imaginable prospects. We see indeed that the solution that we approve is the only one admissible. Consequently, it is enough for us to make it understood." And they wished to proceed like teachers before students. However, the teachers have received baked apples.

This is where our report on nuclear waste becomes involved. It was drawn up to a large extent at the initiative of Vertrrand Giroud, chief mining engineer, a physicist and a great spirit. He had wished to stage an exemplary operation: to take the most important problem, to collect people from various horizons but all of them competent, and to try to have them list the points

about which the scientific community felt there were no problems and the points on which it was necessary to experiment, reflect, in short to debate. But by that time the debate had already become envenomed. Abuse if not bombs started to be traded. When the Ministry of Industry saw our report whose purpose it did not quite understand even though it had been explained to its officials, that department drew back. It did not feel like creating additional worries.

[Question] Are the conclusions of this report of a nature to disquiet the government?

[Answer] Absolutely not. We raise a certain number of unclarified problems and we indicate the solutions that must be sought. We are neither worrisome nor reassuring.

[Question] Can democracy in 1978 really function without a nuclear debate being held?

[Answer] It is not possible to avoid an energy debate. It goes far beyond the nuclear debate. This one could be its start. One would be led to reflection on life styles.

[Question] What role can the ecologists play in this debate?

[Answer] Among the ecologists one finds serious individuals and those who are less so. The labor union members of the CFDT [French Democratic Confederation of Labor], of the atomic energy, for example, who published a book on nuclear power, seem to be serious to me. It is probable that without the ecologists the debate would not be opened. But they have elevated it right away to such a degree of passion and even of violence that its development has become difficult. They have thus finally snowed it under. A debate implies that people listen to each other, that information is exchanged, that one makes a common analysis with a major effort at objectivity. That is what is not being done.

[Question] How should the citizens be inspired to participate in a scientific debate when all the polls show that the French are not really interested in scientific problems and even less so in a nuclear question?

[Answer] If people had published and studied the report on nuclear waste they would have seen that, rid of all its scientific aspects, the problem becomes fairly clear. Should one, for example, break up the most dangerous waste despite the cost of the operation, bury it underground despite the risks of earthquakes, when such waste continues to be dangerous for centuries? Here is a major political problem. It seems to me to be of a nature to have a concrete bearing on Frenchmen given that the problem would be posed clearly when it comes to its immediate implications. In passing, other less mind-boggling problems would become clarified.

"The Difficulty of Reorienting a Complex Economy and Society"

[Question] Does the current of thought of the ecologists which, on many points, coincides with your efforts, appear to you to be in a position to modify this policy of secrecy?

[Answer] I set rabid ecologism aside--the one which places bombs. All it does is lead us toward some kind of fascism. There are other forms of ecologism which are completely respectable. What strikes me is that they do not seem aware that they generate long-term problems. According to them one changes directions as in a small sailboat. They do not perceive the extraordinary difficulty that exists in reorienting a complex economy and society. The logic of planning seems to escape them. However, the ecological debate does not become useful and operational except from the time when it is placed in a programmable perspective.

[Question] Is this trend, even forgetting the difficulties that you mention, strong enough to change something?

[Answer] The ecological current has an unquestionable impact on public opinion. This is a fairly judiciously oriented force. But it may not have a real political influence except on condition that it accept gradualism. From this viewpoint the nuclear moratorium is much too radical. To be sure, those who demand it do not lack arguments. But one cannot halt the EDF's capital programs without saying at the same time that one is moving toward an insufficiency of installed power, toward interruptions in supplies, and finally toward such serious dramas as an accident in a power station. That is what the protestant Federation of France--of which I am a member--stated in response to the expressed concerns of the Churches of Alsace: a nuclear debate should be held. But this will slow down the execution of the program. It is thus necessary to get ready to oversee an economy of scarcity. We have not been understood by some who have accused us of wishing to impose our idealist views by means of bureaucratic constraints. Yet, from the moment that one agrees to hold a difficult and ill-prepared debate it is certain that one exposes oneself to delay in the execution of the nuclear program. Besides, it is already delayed.

"To Control the Technocracy"

[Question] How should this discussion be started?

[Answer] It would be necessary to begin by indicating that we are moving toward an economy of scarcity which must be managed by means other than resorting to cuts in power. This demonstration would place the entire energy problem and the nuclear question in their proper context. In this respect, President Valery Giscard d'Estaing's idea of creating an electric-nuclear information council is not bad. But what would that council do? It would have to bring together a certain number of major impartial technicians.

[Question] Do they exist?

[Answer] Those people who are on the side of government say: "They either have no responsibilities and are not competent or else they have responsibilities and are committed." I am not that pessimistic.

An individual of high intellectual quality, a good university physicist, for example, who may have been associated for a long time with a working group charged with answering the questions of the various currents of opinion should manage to do it. Even if he is not competent at the outset he will become so even though perhaps not to the same extent as the EDF technician. But it is indeed necessary to control the technocracy. It is to this group of major impartial technicians that the CFDT, for example, would address its questions. The group would answer. At that point a genuine discussion would get started.

[Question] Why are you relinquishing the chairmanship of the interministerial group for evaluation of the environment?

[Answer] First because I am 68 years old. Then, because the group has no more significance. The Ministry of the Environment has been in existence for six years now. It has not become a major department but it has services, individuals who think, notable statisticians. The arrangement of a group in charge of weeding things out has become inadequate. We have executed a program that made sense. I hope at present that our study of Rouen will be published integrally. But it is a report put together by independent men and women. It is not conformist.

[Question] A mission charged with establishing, in cooperation with six public enterprises used as guinea pigs, a patrimonial system of accounting has been set up. What do you think of it?

[Answer] It is a good idea. On a certain number of points such as cultivable areas, green areas, historical monuments, and so on, it is possible to make an inventory of our patrimony and describe it in systematic manner. This is a step which goes in the same direction as that of the statisticians who have published an inventory of the environment. It is a very weighty undertaking and it is necessary to do it as soon as possible. The risk is that the discussion may become blurred. To collect data is great. But the problem of synthesis is not solved thereby. I am now moving toward other fields of reflection.

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ICELAND

INSTITUTE WARNS: NEW VOLCANIC ERUPTIONS EXPECTED

Helsinki HELSINGIN SANOMAT in Finnish 27 Aug 78 p 20

[Article by Ritva Remes: "Will Iceland Be Torn Asunder"]

[Text] The residents of Iceland confirm an issue of vast importance with peaceful resignation: their country can tear in half and a part of the island can sink into the depths of the ocean.

Iceland is divided by a two-pronged belt of fire, in which tension is so great that it is possible the country could be torn asunder any day now.

On this same belt one can find nearly all of Iceland's living volcanos. It is expected that the next eruption will occur after approximately a month or between 30 September and 4 October.

According to seismic waves under the area to erupt there is approximately 30 cubic kilometers of molten rock [magma] striving to get to the surface. This volcanic eruption will also threaten the small town of Reykjahlid where emergency evacuations are being carefully rehearsed.

If and when Iceland is some day torn asunder, it is probable the portion of the island toward the North American Continent will sink into the depths of the sea. Geologists consider the prediction to be unscientific, and the residents of Iceland are not too inclined to talk about the matter.

A possible eruption is explained by the fact that the volcanic belt cutting the island in half is sliding slowly at an annual rate of 2 centimeters. At its fastest a volcanic belt can move even 2 meters during an eruption.

There where the surface of the earth is the thinnest above the molten mass or approximately 3 kilometers thick, the molten mass will immediately fill up openings in the surface of the earth caused by an earthquake. According to research this will not solidify because of the continuing circulation of heat.

More Than a Hundred Eruptions

In the 1100-year history of Iceland the majority of the 150 volcanic eruptions has occurred on the belt cutting through this country. Only 14 have been located on the eastern branch of this belt near Reykjavik.

There have been only two eruptions outside of this zone, one in the year 900 in the vicinity of the Viddals River where President Urho Kekkonen recently went fishing and the other occurred later in the country's southeast section.

The last eruption in the belt passing near the capital city of Reykjavik was in the year 1360.

The most recent eruptions on this island were those of Hekla 1947 and 1970, Askja 1961, Surtsey (a new island was created on the shore of Iceland) 1963-67, Heimayen 1973, and Krafla 1975 and 1977.

In addition to these, there are numerous eruptions under the icefield in the volcanic belt. For example, it has previously not been possible to define the southeast shoreline of Iceland because of the water current caused by the eruptions. Deviating from other shorelines on the map there is just a straight line at this point.

The year 1975 is calculated as the beginning of a new era in the northern section of the belt in the area of Krafla since in this area it has been quiet for 300 years.

On the basis of this quiet period a few years ago a power plant was constructed in the area, which has been estimated to be Iceland's greatest money drain eating up many American dollars.

A trial run of the plant had just commenced when the era of eruptions began.

The vibrations connected with the eruptions cracked the bore holes drilled into the earth, by which gas was to have been brought to the power plant.

Now the power plant stands as a huge, lonely memorial. Instruments measuring movements in the earth's lithosphere are its only operating parts.

The instruments relate the slow, 2-meter movement of the earth's crust per every 3 months. When the swelling is at its highest point, an eruption occurs on the surface of the earth. Then one can expect a volcanic eruption. There have been three of these in the area since the construction of the plant.

A City in the DAnger Area

The small town of Reykjahlid with a little less than 1,000 residents is also located on the shore of Lake Myvatn on the border of the area of eruptions.

Every week the residents conduct an emergency evacuation drill. During a particularly violent eruption the town could be covered with lava in half a minute. It is calculated that the town lies in the path of the flow of lava.

Predictions of eruptions are made by the Volcanological Institute established in Iceland in 1973 under the Council of Nordic Country Ministers.

The prediction concerning the great Heimayen eruption in 1975 was not completely correct. Indeed, the eruption was expected, but it occurred at a surprising point.

The resident of Heimayen awoke only after the sounding of sirens and seeing a strange blaze.

"A similar thing cannot happen today," states Heikki Makipaa, a Finnish recipient of a scholarship in the institute.

Since the Heimayen eruption the institute has developed new instruments and procedures by which predictions can be made more precisely than before.

Everyone Goes to Eruption Site

When the eruption of a volcano begins somewhere all the personnel of the institute rush to the site.'

Makipaa, who is beginning his third year of study in the institute, has observed the sites of eruptions several times.

In Makipaa's opinion it is impossible to describe the event. The sound coming from the eruption is immense, uneven. The lava flows quickly made incandescent by the fire while looking for passageways in the earth as it flows like water.

At the eruption site the researchers examine the measurement of the instruments and observe the whole event, for example, the earth's vibrations. The asbestos-clothed research workers quickly measure the temperature of the lava flow with special meters situated on the end of a long pole.

Observation at the point of eruption facilitates the formation of a total picture in future eruptions. An experienced volcanologist can predict quite precisely the sequence of events and decide on the possible evacuation of the population.

During an eruption researchers can, for example, observe the movement of magma. If it does not erupt upward, the flow under the earth can be seen on the surface as accumulating clouds of steam. If previous events in the area are known, the future directions of lava flows can be predicted.

When Makipaa observed the eruption in the area of Krafla, the movement of magma to the north was not expected. The area should have been full. However, the magma still found small passageways to the north.

Now according to the researchers the north is full. Next time the direction should be to the south, toward the town of Reykjahlid.

Earthquakes Predict

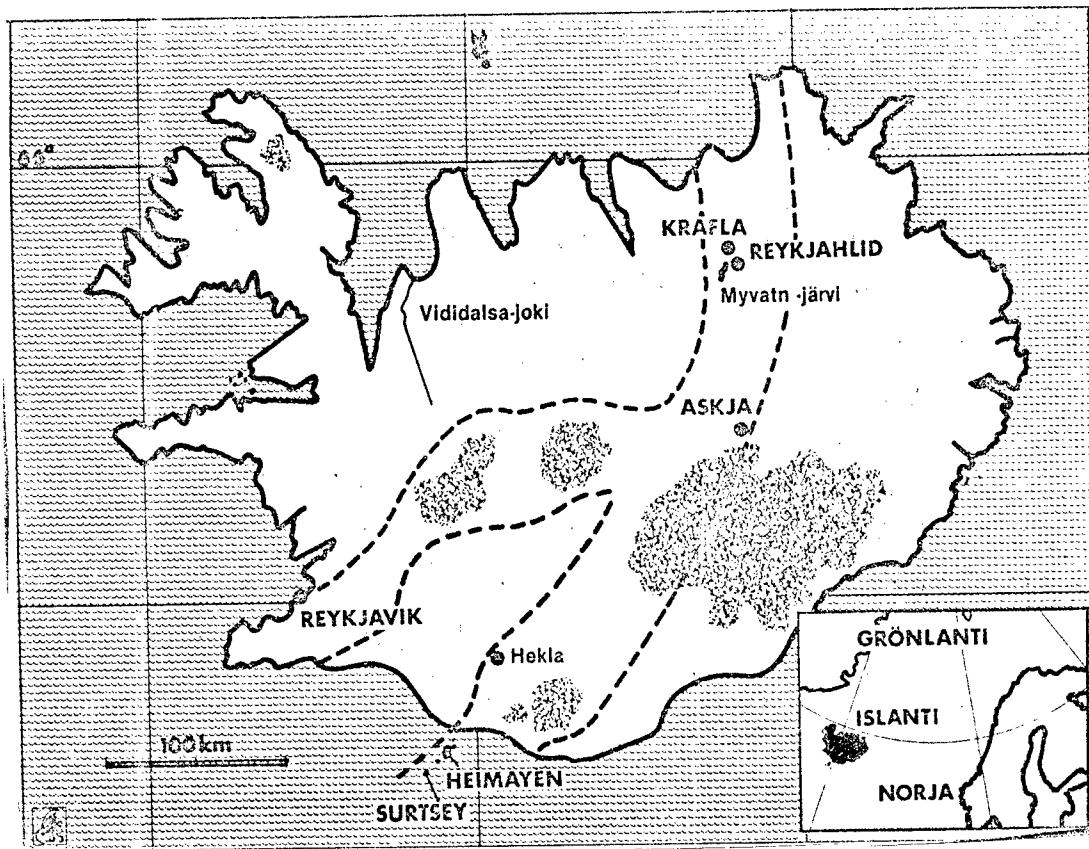
The institute's most important means of research, by which an eruption is predicted, are measurements of the earth's crust, seismographs, and an analysis of volcanic gases.

Of these means the most important is an examination of rises in the earth's crust. Instruments are located at, among other places, the power plant in Krafla.

In the area of Krafla, where the town of Reykjahlid is located, there are three automatically operated seismograph stations. From these stations information is sent to the town where it is examined daily. During critical periods the time on duty is continuous.

Tremors occur daily. When an eruption is imminent, the number and strength of the tremors increase rapidly on the average of 4 to 5 hours before an eruption. During an eruption there are 2,500-3,000 tremors in a 24-hour period.

If the tremors increase slowly, prediction is easy with a precisionness within a few hours. During a slow increase the coming of an eruption will last for days, during a quick increase it is a question of hours.



Ice and fire: The greatest portion of Iceland's ice fields (gray areas) are located on the two-pronged volcanic belt, which splits the island in two.

10576
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PORTUGAL

PUSH TO FIGHT WATER POLLUTION OFF IBERIAN/NORTH AFRICAN COASTS

Lisbon DIARIO DE NOTICIAS in Portuguese 6 Jun 78 p 2

[Text] "The sea cannot continue to be an immense garbage pail for lethal wastes of our civilization. The false idea that its enormous size makes it immune to the growing attack from pollutants can no longer be ignored. If we do not protect marine life, we make jeopardized life on earth," said Almeida Santos, the assistant minister to the prime minister, yesterday at the opening session of the conference for the creation of the Atlantic-Iberian-African Region which will last until tomorrow afternoon. The conference is attended by delegations from Spain, Morocco, Mauritania, Senegal and Guinea-Bissau, in addition to Portugal.

The zone of influence of the proposed Atlantic-Iberian-African Region is geographically defined to the north by the parallel that passes through Nazare on the Portuguese coast; to the south by the Cacine River in Guinea-Bissau; on the west by the meridian that passes through the Flores Island in the Azores Archipelago; and on the east by the coasts of Portugal, Spain, Morocco, Mauritania, Senegal and Guinea-Bissau. This region also incorporates the Azores Archipelago on the northwest, the Madeira and Canary islands in the central part, and Cape Verde Islands on the southwest.

Speaking about these geographic borders Commander Jose Cabido de Ataide, who presides over the Portuguese delegation and organizer of the conference, stressed that "...the geographic position of these archipelagos allows us to have available oceanographic observation stations on open sea especially suitable for convenient support to research of such an extensive maritime area. We also have the advantage of being able to program studies of some oceanographic importance having at our disposal only small-sized ships."

Reasons for the Creation of a New Maritime Region

Speaking about the reasons leading to the project to create a new international maritime zone which is being discussed in Lisbon at this time, the head of the Portuguese delegation alluded "...to the problems that we have to face today and which are derived from the increase of the jurisdiction of our countries over the sea with the creation of the Exclusive Economic

Zone and the appearance of the maritime pollution phenomena which we are forced to face under the threat that if we do not do so, and soon, we shall run the risk of allowing the creation of irreversible situations which could be harmful to us."

Commander Cabido de Ataide added: "Sea pollution caused in various ways and having various origins is a fact of our times." He continued by stressing that to be a part of various conventions and international treaties on this matter already negotiated or to be negotiated, "...is a need that we all have, because in spite of not having industrial development which forces us to use the various means for elimination of pollutants that are controlled by such conventions, we do not have any other way of knowing where, in what quantity and when the discharges are being made." He said this with reference to the fact that "...the most used zones of waste discharge are located in the abyssal trenches located between the European continent and the Central-Atlantic mountain range, and that as a consequence there are great probabilities that part of the pollutants are transported to the south when they are incorporated into the dynamics of the currents of Portugal and the Canary Islands."

The head of the Portuguese delegation continued: "This being the case, our Atlantic-Iberian-African Region is potentially subject to pollution and we can only defend it if we are on the alert and control the situation, acting in time to prevent irreversible situations. It must be us, the countries of the region, who are to take the initiative of the continuous 'control' of this pollution by forming a bloc of countries with common interests concerning the defense against the pollution of maritime ecosystems which it is our duty to preserve for the benefit of the people of our countries."

Selection of Portugal to Host the First Meeting

In the speech officially marking the opening of the session, in his capacity as the representative of the Portuguese Government, Almeida Santos, the assistant minister to the prime minister, said that "Portugal is honored of having in good time taken the initiative of presenting to the 10th General Assembly of the UNESCO Intergovernmental Oceanographic Commission a proposal for the study of an oceanographic region to be called the Atlantic-Iberian-African Region. Of course, also with the support of the countries here represented as directly interested parties in addition to other countries such as Brazil, the United States of America, Kenya, Venezuela, and so forth which, although geographically farther removed, already understand the real significance and potential importance of this initiative.

"The fact that at the initiative of Spain your countries have selected Portugal to coordinate this important work honors us and fills us with pride and at the same time imposes on us a responsibility which we shall try to honor," said Almeida Santos.

Great Economic Interest in the New Maritime Zone

In another passage of his speech Almeida Santos also stressed that "...the Atlantic-Iberian-African Oceanographic Region, well defined geographically, just as other regions of which the most outstanding examples are those of the Caribbean Sea and the ecosystem of the Mediterranean, constitute a limited oceanographic region insufficiently studied, but known well enough to be aware that it has reasonable meteorological stability and therefore sufficient climatological regularity so that its study permits conclusions with a satisfactory degree of certainty. Of this region it is already sufficiently known that it can constitute an essential contributor to the economic development of the countries here represented."

Almeida Santos continued: "For its study we are not starting from zero. There are already operational laboratories on the Santa Maria Island in the Azores Archipelago, on the Madeira Island and on Tenerife in the Canary Archipelago. Identical research installations can be established on Sal Island in the Cape Verde Archipelago. The work already done and what will be done in the future in cooperation will allow very shortly to reach the point of no return starting from which we shall be able to ensure not only the expectation, but also the support and technical and financial aid from specialized international organizations of which we are a part."

State Secretary for Fisheries Vasco Neves and deputy chief of the Navy General Staff Vice Admiral Silva Horta were present at the inaugural working session of this conference which is being held at the installations of the Gulbenkian Foundation.

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SPAIN

GOVERNMENT EFFORT AGAINST POLLUTION CONTINUES

Madrid ACTUALIDAD ECONOMICA in Spanish 19 Aug 78 pp 22-24

[Article by Jeronimo Martel]

[Text] War Against Atmospheric Pollution

In the next Council of Ministers session of two royal decrees will be passed that are like a certificate of life for the administrative structure represented by the General Directorate of Environment [DGMA]. After its well-deserved vacation, congress will soon study the first draft of the Donana National Park Law, on which so much proecologist ink as been lavished. Finally, the following announcement, dated last July, will soon be made by the DGMA: "One of the most urgent tasks we are initiating is the preparation of the first draft of a General Law for the Protection of the Environment."

ACTUALIDAD ECONOMICA spoke on these matters with Daniel de Linos, director general of environment.

Why seek "summer snakes," when the environment "nature's economy," as someone called it--is crying out after so many forest fires and so many beaches polluted by our truly hot and tourist-infested summer? Why is that the goal for which--in fact, as early as 1972 Laureano Lopez Rodo went by bicycle to the United Nations Conference on Human Environment held in Stockholm--good legal and financial therapeutics are going to be applied, for the present, with the two impending decrees, the one--generic--a combination of the Ministry of Treasury and MOPU [Ministry of Public Works and Urbanism] to give greater flexibility to the granting of subsidies to public and private entities for the implementation of Article 11 of the Law for the Protection of the Atmospheric Environment, and the other--specific--a sanitation plan for Greater Bilbao so polluted these days with sulfur dioxide (SO_2).

That therapeutic measure was indeed necessary, as has just been pointed out in the First Congress on Natural Areas, held in Daimiel, and culminating in the Third General Assembly of the Ecology Movement. The latter ridiculed previous legislation on the environment or related to it--for example, the law for the protection of natural areas or that of the soil--and even violently contested Article 41 of the Draft constitutional in which, to be sure, the environment receives unusual treatment compared with other legislation.

Bilbao, How You Have Changed!

According to recent information put out by the Vizcaya Savings Bank, 80 percent of the residents of Bilbao are affected by the annual outfall of 120,000 tons of sulfur dioxide and 52,000 tons of dust on the city. That is how it is reported.

Therefore, it is no wonder that in the "General Report on the Environment in Spain," published in 1978 by the MOPU's undersecretary of territorial and environmental planning, the sectorial analysis of industrial pollution in its atmospheric pollution aspect concludes with the elaboration of a "pilot plan for the reduction of atmospheric pollution in Greater Bilbao," which will undoubtedly be used by the impending decree; as an emergency pilot plan designed to reduce conventional pollution--and not the phenomenon that is more difficult to attack, called "photochemical fog"--the plan provides for the following emergency measures during anticyclonic periods:

- Restrict the circulation of vehicles as much as possible.
- Reduce production in certain activities of the chemical industry and in thermal power plants.
- Regulate and reduce the operation of combustion installations in industry to limit the emission of nitrogen oxide and hydrocarbons.
- Regulate and reduce the operation of central heating systems.
- Regulate certain processing operations in the organic-chemical industry and in some ferrous-metal industries.

In Daniel de Linos' opinion, just as the problem which gave rise to the ecological assault on the industrialization of Campo de Gibraltar was political, that which gave rise to the uncontrolled industrialization of the Bilbao estuary was merely one of economics. So be it. That economic problem ended up ruining this natural environment causing Pio Baroja to say: "I do not believe there is anything in the peninsula that gives a greater impression of strength, work and energy than those 14 or 15 km of waterway." It is indeed true that Unamuno, more realistic, at least in this instance,

describes it as a narrow estuary between banks that is now a canal, an estuary of metallic reflections, ordinarily obscured by black heaps of coal and red heaps of iron ore, an estuary that swells during high tide with nearby sea water and, soon after, at low tide, becomes almost a sewer; an estuary that seems like an artery of someone who is ill."

Whoever Pollutes Must Pay

In the document entitled Directives for the Formulation of an Environmental Policy, with governmental status, of 5 June 1978--anniversary of World Environmental Day--the following action, among other measures, is indicated to combat atmospheric pollution: "Ascribing to each sector, and within each sector to each focal point, its responsibility for pollution through the application of the principle, 'Whoever pollutes must pay.' Undoubtedly, that type of action is somehow included in the impending Bilbao sanitation plan, although De Linos made it clear to ACTUALIDAD ECONOMICA that the other decree is aimed at obviating the harshness of this principle imposed in a strict manner in the United States but which, in his opinion, cannot be applied in the same way here.

"When the Bilbao industrialist is asked to make a greater effort to fight against atmospheric pollution," De Linos stated, "the possibility of giving him a subsidy is simultaneously offered. It is not possible to apply the American principle. 'Whoever pollutes must pay,' literally in this instance, particularly if we take into consideration the debated subject of the inclusion--or repercussion--of the cost of the struggle against pollution in the final price. That is possible so long as there is not, contrary to what we have here, a final price control that is incompatible with the genuine economy of a free market."

Bilbao is not the only polluted city: Madrid, Huelva--with serious problems-- and Tarragona are also polluted, according to Daniel de Linos, although Greater Bilbao and part of Madrid deserve the prize for being declared polluted-atmosphere areas--at the request of their own city councils. And, in addition, Bilbao is going to contribute some antipollution money that was "sleeping the sleep of the righteous," due to the supplementary legislation of Article 11 of the Law for the Protection of the Atmospheric Environment of 1972.

Emission of Pollutants to the Atmosphere in Spain
(Tons)

	1960	1965	1970	1975
Automotive vehicles	632,000	1,048,300	2,192,200	3,550,291
Heat generators	1,178,360	2,304,566	3,372,286	4,428,023
Industrial processing (1)	543,427	876,613	1,335,453	1,929,565
Miscellaneous	353,068	634,421	1,034,990	1,486,181
 Totals	 2,706,855	 4,863,900	 7,934,929	 11,394,060

(1) Excluding the burning of fuels at fixed sources.

Quality Levels of the Air in Bilbao (Annual Averages in Micro-
grams per Square Meter)

Pollution	1970	1971	1972	1973	1974	1975	1976
SO ₂	142	144	148	159	182	193	173

Accumulated Investments Made in Measures Aimed at Correcting Atmos-
pheric Pollution in Industry During the Year 1976 (Figures Given Are
in Millions of Pesetas)

Oil refinery -----	4,100
Cement manufacture -----	3,200
Iron and steel industry -----	1,500
Thermal power plants -----	1,500
Sulfuric acid manufacture -----	700
Aluminum metallurgy -----	200
Other industrial sectors -----	3,800
 Total for industry -----	 15,000

Source: GENERAL INFORMATION ON THE ENVIRONMENT IN SPAIN, by the under-secretary of territorial and environmental planning (second edition 1978).

The story is as follows. Article 11 permits the government to grant a series of benefits: subsidies, tax exemptions and tariff reductions, freedom to amortize and access to official credit. More specifically, it states the following in Paragraph 1:

"Paragraph 1 Subsidies:

"a) In special cases and provided the measures taken against pollution are obligatory and impose economic burdens that are not acceptable to those so obliged, the government may grant subsidies to industries and activities established or authorized prior to the publication of this law in accordance with the norms set by decree.

"b) Subsidies may also be granted to public or private entities that make investments for the investigation of methods and systems aimed at vigilance, purification and correction."

This supplementary legislation, in effect up to now, was so restrictive that, according to the director general of environment, "no subsidy has been granted to any firm having capital!" As a result, the government had to assume responsibility for that investigation, which was made by the pertinent sector of the Higher Council for Scientific Research reserving 350 million pesetas for Bilbao's future sanitation project. "This year the remainder, summed up at this year's prices, was increased to 1.2 billion pesetas."

The Faust Pact

The second report to the Rome Club, entitled "Humanity at Crossroads," confirms being lenient to flagrant abuse, to the power of technology: "The heavy pressure to which technology is subjected could easily be converted into a pact like that Dr Faust made with the devil; worse yet, to satisfy our immediate needs for comfort, we would not just be selling our soul but also the well-being--and perhaps the very existence--of generations that have not yet come into the world. Can this be what Greater Bilbao has done? In any event, public administration does not take that into account, but it is in favor of cleansing Bilbao from a mysterious and evil conjuration that appears to emerge from the mists of the estuary, where they conceal the false splendor of the photochemical fog.

"The Bilbao sanitation project," Daniel de Linos says, "will have a first phase of 4 years. First, it will attack the focal centers of pollution for which some 40 firms are responsible; secondly, it will concentrate on another 300 firms, which will account for practically all of Bilbao's emission points.

"The plan has various aspects, one of which, of immediate implementation, consists of a single and homologous network of censors--its aim, relative to the agreement between the administration and those administered, is to

promote the plan's reliability--and, if possible, automatic like that of Madrid, which proposes to be subordinate to the Ministry of Health in collaboration with the National Meteorological Institute (in Madrid, however, is a dependency of the city council). Since the Ministry of Health is short of money for this purpose, the network will be financed with the budgeted sum of 1.2 billion pesetas now released by the general directorate for 1978, to be spent immediately."

That budgeted amount is really considerable, although it is insignificant in comparison with that of the American Environmental Protection Agency, the highest in the world, whose budget is \$8 billion. Nevertheless, it is something else that really worries the DGMA: "Here," the interviewee says, "there are also other budgeted amounts, small ones, for industry, agriculture, health and so on. One of the objectives of the general directorate, through CIMA--Interministerial Commission on the Environment--is to set up a single program of public investments, or PIP, for the environment, which would be administered in an integrated manner."

"There are already administrative precedents in the programs for Campo de Gibraltar and Tierra de Campos with their joint investment plans approved by the Council of Ministers. Instead of miscellaneous isolated efforts including underhanded dealings, a formula with limited yield is preferable. No more parallel plans, tangents and secants."

Environmental Law

The initiative taken, however remote from the desired law, was that taken by the Senate or, more specifically, by Jose Luis Sampedro, royalist senator and president of the Commission on the Environment, who became the law's promotor. As for congress, in which such a commission was administratively lacking, it set up the commission ad hoc because of the impending Donana National Park Law. The DGMA, which caused the commission to be set up as a result of its preliminary plan, hopes--in the words of the director general--that the commission will become permanent.

"This subject," De Linos says, "had often been brought up at large by ecological associations, which wondered, with good reason, why the Spanish Government was very weak on environmental matters. As a matter of fact, there is an abundance of irrelevant legislation, particularly sectorial, due to the lack of a general law that integrates and defines a major legal system of directives relative to environmental policy."

Such directives on environmental policy are contained in the document entitled Directives on the Formulation of an Industrial Policy, of 5 June, a working document directed to the members of CIMA by the Interministerial Group by mandate of the 20th Plenary Session and containing 123 full pages. In its introduction it states:

"One of the direct purposes of the document presented here is to have it brought, at the right time, to the attention of the government and to serve as a basis for the government--through CIMA--to draw up an environmental program that will unite all ministries involved in this matter."

Among "DGMA's objectives over the short term," as indicated in the publication, ENVIRONMENTAL ACTION, issued in 1978 by the directorate, the following appears:

"The elaboration of an integrated legal system as a feature of that policy. (Preliminary draft of the Law for the Protection of the Environment)."

Nature is Better

Ronsard said it" "Nature is always better than art." Daniel de Linos must be of the same opinion in view of his ideology as a social democrat, ready to intervene only when a social principle is involved and not at the expense of a social cost. That is why he is concerned over Spain's environmental deterioration. It is too much to be able to see that, despite the obviousness of atmospheric pollution--still combated by a law that qualifies as an "instrument without political awareness of the primary concern, although valid enough with the necessary revision"--" the country's big problem is the pollution of its waters, even though it may be slower." "I refer to all continental waters while not, for a moment, forgetting the coastal waters." In those waters, without purification, the landscape has already died.

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